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ABSTRACT

This study examined psychosocial correlates of substance abuse during late adolescence. Older adolescents' (N=276) aged 17-22, self-reported use of marijuana, cocaine, and other illicit drugs was examined in relation to several psychosocial variables, including sensation seeking, aggression, self-esteem, depression, and perceived peer prevalence and dangerousness of risk-taking activities. Initial multivariate and univariate multiple regression analyses indicated a significant relation between each type of substance use and psychosocial variables found in previous research to be related to substance use (e.g. sensation seeking, perceived negative outcome). Subsequent multivariate and univariate multiple regression analyses examined patterns of association for each sex. In general, relations were somewhat stronger and broader for males. Canonical correlation analysis revealed that among males, high experience seeking and low perceived dangerousness of risk-taking activities were predictive of marijuana use, and low boredom susceptibility and high perceived dangerousness of risk taking activities were negatively correlated with cocaine use. Among females, high experience seeking and high disinhibition were associated with marijuana use. (Data tables are included.) (Author/ABL)

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# PSYCHOSOCIAL CORRELATES OF ADOLESCENT SUBSTANCE USE

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*ABSTRACT*

Older adolescents ($n$=276, ages 17 to 22) self-reported use of marijuana, cocaine, and other illicit drugs was examined in relation to several psychosocial variables, including sensation seeking, aggression, self-esteem, depression, and perceived peer prevalence and dangerousness of risk-taking activities. Initial multivariate and univariate multiple regression analyses indicated a significant relation between each type of substance use and psychosocial variables found in previous research to be related to substance use (e.g., sensation seeking, perceived negative outcome). Subsequent multivariate and univariate multiple regression analyses examined patterns of association for each sex. In general, relations were somewhat stronger and broader for males. Canonical correlation analysis revealed that among males, high experience seeking and low perceived dangerousness of risk-taking activities were predictive of marijuana use, and low boredom susceptibility and high perceived dangerousness of risk-taking activities were negatively correlated with cocaine use. Among females, high experience seeking and high disinhibition were associated with marijuana use.

*AIMS*

1. To examine the psychosocial correlates of illicit substance use during late adolescence from a multifactorial perspective.

2. To investigate whether the use of different substance types (i.e., marijuana vs. cocaine vs. other illicit drugs) is differentially related to psychosocial factors.

3. To explore the influence of gender on the relations between psychosocial factors and adolescent substance use.

*METHOD*

1,396 undergraduate Introductory Psychology students at the University of Pittsburgh were administered a brief questionnaire concerning risk-taking behavior. Marijuana use, cocaine use, and other illicit drug use (i.e., *not* marijuana or cocaine) were among those behaviors examined. Follow-up assessment was conducted on 277 of these subjects (146 males, 131 females; ages 17 to 22 years), 38 of whom were selected based on risk-taking questionnaire scores $\leq$ 1.5 standard deviations above the mean for their gender. The remaining 239 subjects were selected randomly from the pool of subjects who completed the initial risk-taking questionnaire. Of follow-up subjects, 93.9% were White, 89.9% were college freshmen or sophomores, and mean family income was $30,000-45,000. Subjects who participated in the follow-up received experimental credit, a requirement of the Introductory Psychology course. Follow-up assessment consisted of the administration of the battery of self-report psychosocial measures described in Table 1.

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## *RESULTS*

1. Preliminary regression analyses (Table 2).
   - A. Multivariate multiple regression analyses.
     - i. The set of psychosocial variables hypothesized to be associated with adolescent substance use (i.e., sensation seeking subscales, self-esteem, aggression, perceptions of negative outcome and peer prevalence, and depression) was significantly related to substance use.
     - ii. The set psychosocial variables hypothesized to be unrelated to adolescent substance use (i.e., defendence, social desirability, and lability of self-worth) did not predict substance use.
   - B. Univariate multiple regression analyses.
     - i. Equations derived from the psychosocial variables hypothesized to be associated with adolescent substance use were significant for all three substances.

2. Gender-specific regression analyses (Table 3).
   - A. Females.
     - i. Multivariate multiple regression analysis was significant.
     - ii. Univariate multiple regression analyses were significant for marijuana and other illicit drug use.
   - B. Males
     - i. Multivariate multiple regression analysis was significant.
     - ii. Univariate multiple regression analyses were significant for all three substance types.

3. Gender-specific canonical correlation analyses (Table 4).
   - A. Females.
     - i. High experience seeking and high disinhibition predicted marijuana use.
   - B. Males.
     - i. High experience seeking and low perceived dangerousness of risk-taking activities predicted marijuana use.
     - ii. Low boredom susceptibility and high perceived dangerousness of risk-taking activities predicted cocaine non-use.

## *CONCLUSIONS*

1. The group of psychosocial factors selected for study was able to account for a significant proportion of the variance in each of three substance use types.

2. These relations were strongest for marijuana use and weakest for cocaine use.

3. Psychosocial factors were better able to account for substance use among males than among females, partly because a broader range of factors was related to male drug use.

4. Certain factors were more important than others, particularly when substance type and/or gender is considered.
   - A. Experience seeking was consistently found to be related to substance use regardless of drug type or gender.
   - B. Perceived dangerousness of risk-taking appears to be related to male substance use.
   - C. Disinhibition appears to play a greater role in female drug use.
   - D. Boredom susceptibility may be specifically associated with male cocaine use.

**TABLE 1**
**Self-report Measures Administered at Follow-up Assessment**

| INSTRUMENT | SOURCE | CONSTRUCT | HYPOTHESIZED RELATION TO SUBSTANCE USE |
|---|---|---|---|
| The Beck Depression Inventory (BDI) | Beck (1961) | Depressive cognitions and affect | Positive correlation |
| The Jackson Personality Research Form (PRF) | Jackson (1967) | | |
| (a) Aggression | | Aggressivity | Positive correlation |
| (b) Defendence | | Interpersonal suspiciousness | None |
| (c) Social Desirability | | Self-report bias | None |
| The Probability Reasoning Scale (PRS) | Arnett (1989) | | |
| (a) Perceived Negative Outcome | | Belief that "risk-taking" activities will produce negative consequences | Negative correlation |
| (b) Perceived Peer Prevalence | | Estimate of percentage of peers who engage in "risk-taking" activities | Positive correlation |
| The Rosenberg Self-Esteem Scale (RSE) | Rosenberg (1965) | Self-worth in adolescence | Negative correlation |
| The Stability of Self-Esteem Scale (SSE) | Rosenberg (1979) | Self-perceived lability of self-worth | None |
| The Zuckerman Sensation Seeking Scale-V (SSS) | Zuckerman (1979) | | |
| (a) Boredom Susceptibility | | Aversion to repetitive experiences | Positive correlation |
| (d) Disinhibition | | Need to disinhibit social experiences | Positive correlation |
| (c) Experience Seeking | | Desire for novel experiences | Positive correlation |
| (d) Thrill and Adventure Seeking | | Desire to engage in sports or physically dangerous pursuits | Positive correlation |

TABLE 2
Summary of Multivariate and Univariate Multiple Regression Analyses
for Psychosocial Measures with Measures of Drug Use

ALL SUBJECTS

Multivariate analysis:

Pillai's Trace = .475, $F(27,666) = 4.64^{**}$

Univariate analyses:

| Criterion variable | $F(9,222)$ | $R$ | $R^2$ | Raw regression coefficients | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | DIS | BS | TAS | ES | RSE | AGG | NEG | NORM | BDI |
| Marijuana Use | $13.57^{**}$ | .596 | .355 | $.169^{*}$ | -.050 | -.014 | $.444^{**}$ | .056 | .034 | $-.163^{*}$ | -.088 | .078 |
| Cocaine Use | $4.91^{**}$ | .407 | .166 | -.077 | .152 | -.002 | $.215^{*}$ | .118 | -.038 | $-.237^{**}$ | -.043 | .050 |
| Other Illicit Drug Use | $6.48^{**}$ | .456 | .208 | -.027 | .060 | .004 | $.365^{**}$ | .081 | -.001 | $-.178^{*}$ | -.009 | -.018 |

$^{**}p \leq .001$; $^{*}p \leq .01$

Note: DIS = Sensation Seeking Scale: Disinhibition; BS = Sensation Seeking Scale: Boredom Susceptibility; TAS = Sensation Seeking Scale: Thrill and Adventure Seeking; ES = Sensation Seeking Scale: Experience Seeking; RSE = Rosenberg Self Esteem Scale; AGG = Personality Research Form: Aggression; NEG = Probability Reasoning Scale: Perceived Negative Outcome; NORM: Perceived Peer Prevalence; BDI = Beck Depression Inventory.

TABLE 3
Summary of Multivariate and Univariate Multiple Regression Analyses
for Psychosocial Measures with Measures of Drug Use for Each Sex

MALES

Multivariate analysis:

Pillai's Trace = .701, $F(27,330) = 3.72^{***}$

Univariate analyses:

| Criterion variable | $F(9,110)$ | $R$ | $R^2$ | Raw regression coefficients DIS | BS | TAS | ES | RSE | AGG | NEG | NORM | BDI |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Marijuana Use | $10.05^{***}$ | .672 | .451 | $.187^{*}$ | -.047 | -.119 | $.536^{***}$ | .068 | -.017 | $-.207^{*}$ | -.117 | .020 |
| Cocaine Use | $5.27^{***}$ | .549 | .301 | -.018 | .177 | -.045 | $.255^{**}$ | .166 | -.054 | $-.328^{***}$ | -.053 | .030 |
| Other Illicit Drug Use | $5.43^{***}$ | .554 | .307 | .081 | -.019 | .025 | $.418^{***}$ | .120 | -.131 | -.165 | -.150 | -.149 |

FEMALES

Multivariate analysis:

Pillai's Trace = .447, $F(27,306) = 1.99^{**}$

Univariate analyses:

| Criterion variable | $F(9,222)$ | $R$ | $R^2$ | Raw regression coefficients DIS | BS | TAS | ES | RSE | AGG | NEG | NORM | BDI |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Marijuana Use | $4.88^{***}$ | .549 | .301 | .175 | -.099 | .113 | $.350^{***}$ | .005 | .080 | -.083 | -.101 | .148 |
| Cocaine Use | .52 | .210 | .044 | -.093 | .075 | .041 | .151 | .057 | .007 | -.064 | -.030 | .018 |
| Other Illicit Drug Use | $2.55^{**}$ | .429 | .184 | -.162 | .116 | .000 | $.363^{***}$ | .026 | .058 | -.172 | .059 | .058 |

$^{***}p \leq .001$; $^{**}p \leq .01$; $^{*}p \leq .05$

Note: DIS = Sensation Seeking Scale: Disinhibition; BS = Sensation Seeking Scale: Boredom Susceptibility; TAS = Sensation Seeking Scale: Thrill and Adventure Seeking; ES = Sensation Seeking Scale: Experience Seeking; RSE = Rosenberg Self Esteem Scale; AGG = Personality Research Form: Aggression; NEG = Probability Reasoning Scale: Perceived Negative Outcome; NORM: Perceived Peer Prevalence; BDI = Beck Depression Inventory.

TABLE 4
Canonical Analysis of Psychosocial Variables
Versus Substance Use Variables

MALES

| | Canonical Correlations | | |
|---|---|---|---|
| | 1 | 2 | 3[a] |
| $R^2$: | .482 | .138 | .081 |
| $R$: | .694** | .371* | .285 |
| **Predictor variables** | | | |
| Disinhibition (SSS) | .516 | .143 | |
| Boredom Succeptibility (SSS) | .389 | -.576 | |
| Thrill and Adventure Seeking (SSS) | .266 | .120 | |
| Experience Seeking (SSS) | .854 | .211 | |
| Self-Esteem (RSE) | .012 | -.026 | |
| Aggression (PRF) | .138 | -.117 | |
| Perceived Negative Outcome (PRS) | -.658 | .447 | |
| Perceived Peer Prevalence (PRS) | -.249 | .077 | |
| Depression (BDI) | .074 | -.413 | |
| **Criterion variables** | | | |
| Marijuana Use | .960 | .162 | |
| Cocaine Use | .708 | -.585 | |
| Other Illicit Drug Use | .745 | .275 | |

FEMALES

| | 1 | 2[a] | 3[a] |
|---|---|---|---|
| $R^2$: | .315 | .119 | .013 |
| $R$: | .562** | .344 | .115 |
| **Predictor variables** | | | |
| Disinhibition (SSS) | .616 | | |
| Boredom Succeptibility (SSS) | .350 | | |
| Thrill and Adventure Seeking (SSS) | .435 | | |
| Experience Seeking (SSS) | .853 | | |
| Self-Esteem (RSE) | -.141 | | |
| Aggression (PRF) | .391 | | |
| Perceived Negative Outcome (PRS) | -.340 | | |
| Perceived Peer Prevalence (PRS) | -.292 | | |
| Depression (BDI) | .251 | | |
| **Criterion variables** | | | |
| Marijuana Use | .972 | | |
| Cocaine Use | .258 | | |
| Other Illicit Drug Use | .578 | | |

**$p \leq .001$; *$p \leq .05$
[a]Coefficients have been omitted since $R^2$ is nonsignificant.